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## Introduction

The cover of the fourth issue of the Journal of Digital Landscape Architecture 4-2019 shows the beauty of the integrated point cloud model of above water and underwater segments of mangroves on Bunaken Island, North Sulawesi. It was created by J. Rekitke and Y. Ninsalam in 2015.

The DLA 2019 is organized on the Anhalt University campus immediately adjacent to the iconic Bauhaus building in Dessau, Germany. In recognition of the Bauhaus centenary, we have responded with this year's main theme:

### **Landscape: Informed by Science, Shaped by Design.**

This theme seems to be our best possible answer to the discussion on the founding of the Bauhaus and its meaning for our profession today.

This fourth issue of the JoDLA contains fully peer-reviewed articles drawn from the 20th annual Digital Landscape Architecture Conference DLA 2019. It covers nine chapters with the following broad topics:

- Landscape: Informed by Science, Shaped by Design
- Analog and Digital Landscape Architecture
- BIM for Landscape
- Augmented Reality (AR), Virtual Reality (VR) and Immersive Displays in Landscape Design
- Geodesign
- Algorithmic Landscapes
- Point Cloud Applications in Landscape Architecture
- Smart Cities and Smart Regions
- Teaching Digital Landscape Architecture

We hope you will appreciate the fourth edition. The printed copy was first distributed at the DLA 2019 held from May 22 to May 25. You will find all the contributions online as open access publication at the [gis.Point](http://gis.Point) and [gis.Open](http://gis.Open) platforms of Wichmann <http://gispoint.de/jodla.html>.

We would also like to invite you to the next DLA conference. The 21st international conference on information technology in landscape architecture, Digital Landscape Architecture DLA 2020, will be held at the Graduate School of Design at Harvard University in Cambridge, Massachusetts from June 1 to 2, 2020.

The Journal of Digital Landscape Architecture invites you to submit ideas for special issues and topics. Please follow our continuously updated announcements and call for papers and posters at [www.digital-la.de](http://www.digital-la.de). Here you will also find the complete documentation of the DLA beginning from the year 2000.

*Erich Buhmann, Stephen Ervin, Sigrid Hehl-Lange, James Palmer, and Jörg Rekitke*

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## **Editorial: Landscape – Informed by Science, Shaped by Design**

Landscape architecture and architects have long resided – with varying degrees of conviction and comfort – between “Art” and “Science.” With feet firmly planted on either side of this conceptual divide, they have long worked – with varying degrees of success – to marry or hybridize the two.

This dichotomy is the theme of this year's 20th annual International Digital Landscape Architecture Conference, which will be held in Dessau, Germany, on the centenary of the Bauhaus. The conference title – “Landscape: Informed by Science, Shaped by Design” – suggests both the conjoined nature of science and design, and also suggests sequence, with “informing” preceding the “shaping.”

This duality also connects to a critical contemporary issue in our discipline: the relationship between the “analog” (real) and the “digital” (artificial). For some time these issues have dominated discussions in landscape architecture theory, education, and practice. We hear questions such as “What can computers have to do with creativity?” and assertions like “Landscape architecture is more akin to painting than to biology.” Even more vexing and urgent are the dilemmas faced by students, practitioners, and everyday global citizens as they wrestle with considerations of “What is real?”, “What is timeless?”, “What are appropriate technologies, for ideation, representation, communication, and construction?”

The breadth of topics in this edition of JoDLA, and the depth of the investigations, suggest that the marriage- and hybridization-efforts between science and design, and between analog and digital, are well underway. From “point clouds” to “smart regions,” in education, research, and practice, from geodesign and BIM software and workflows, algorithmic approaches and mixed-reality immersive visualizations, terrain modeling, simulations of tidal floods and sea-level rise, landscape perception, cross-scale thinking, machine learning, and more – digital landscape architecture is alive and well!

Just as we know that in design there are no single right answers, we now know that there are no singular most effective design methods, technical workflows, or approaches to community participation, or best solutions to sea-level-rise mitigation, preservation of biodiversity, or achieving green, just, sustainable urbanism. Rather, there is an increasingly widespread and diverse global community addressing all the many pressing questions and challenges facing people, environments, and the planet, using all kinds of technologies, and increasingly exploring the many unfolding facets of digital landscape architecture.

The pre-digital landscape architect Frederick L. Olmsted understood that integrating social, technological, natural, and other systems was key to his radical vision of social good, public health, and the designed landscapes. The proto-digital Ian McHarg, too, insisted on the necessity of the conjoined viewpoints and contributions of the sciences together with design thinking. Today's emergent-digital landscape architects – for whom informing and being informed, shaping and being shaped, are familiar and necessary everyday acts – continue to marry design to science, and analog to digital. This year's DLA conference celebrates those marriages, through the lens of the digital – not in isolation, but in active partnership.

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